

CIVIL SERVICE RETIREMENT AND DISABILITY FUND

LETTER

FROM

THE ADMINISTRATOR OF VETERANS' AFFAIRS

TRANSMITTING

PURSUANT TO LAW THE TENTH ANNUAL REPORT
OF THE BOARD OF ACTUARIES OF THE CIVIL
SERVICE RETIREMENT FUND



FEBRUARY 17 (calendar day, MARCH 3), 1931.—Referred to the
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FROM

THE ADMINISTRATOR OF VETERANS AFFAIRS

TO THE

COMMISSIONER OF THE TAX AND FINANCE
DEPARTMENT OF THE UNITED STATES
ON THE BOARD OF ACTING OF THE CIVIL
SERVICE RETIREMENT FUND



Approved: 11-10-1937 (Revised 11-10-1937) - Revised for the
Department of Veterans Affairs and related to the Civil
Service Retirement Fund

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON, D. C.

LETTER OF TRANSMITTAL

VETERANS' ADMINISTRATION,
Washington, March 2, 1931.

The PRESIDENT OF THE SENATE,
Washington, D. C.

SIR: Transmitted herewith is the Tenth Annual Report of the Board of Actuaries of the Civil Service Retirement and Disability Fund under the provisions of section 16 of the act of May 29, 1930 (Public, No. 279, 71st Cong.).

In view of the fact that the Bureau of Pensions with all of its activities was consolidated in the Veterans' Administration under the act of July 3, 1930, the report is being submitted by me instead of by the Secretary of the Interior as heretofore.

Very truly yours,

FRANK T. HINES, *Administrator.*

LETTER OF TRANSMITTAL

Washington, D.C., July 1, 1900.

The President, at his residence.

I have the honor to acknowledge the receipt of your letter of the 27th inst. and to inform you that the same has been forwarded to the proper authorities for their consideration. I am, Sir, very respectfully,
Yours very truly,
John D. Long

John D. Long, Secretary of War.

CIVIL SERVICE RETIREMENT AND DISABILITY FUND

VETERANS' ADMINISTRATION,
BUREAU OF PENSIONS,
Washington, March 2, 1931.

To: Administrator.

From: Acting Commissioner of Pensions.

Subject: Tenth Annual Report of the Board of Actuaries.

Section 16 of the act of May 29, 1930 (Public No. 279, 71st Cong.) which provides for retirement of employees in the classified civil service, and for other purposes, makes provision for the appointment of a Board of Actuaries "whose duty it shall be to prepare an annual report upon the actual operations of this act with authority to recommend to the Commissioner of Pensions such changes as in their judgment may be deemed necessary to protect the public interest and maintain the system upon a sound financial basis."

Section 17 of the act makes provision for the transmission of the reports of the Board of Actuaries to Congress. In harmony with the provisions of the act aforesaid, I am handing you herewith for transmission to Congress the Tenth Annual Report of the Board of Actuaries.

E. W. MORGAN,
Acting Commissioner.

FEBRUARY 28, 1931.

Hon. E. W. MORGAN,
*Acting Commissioner of Pensions, Veterans' Administration,
Bureau of Pensions, Washington, D. C.*

DEAR SIR: The board of actuaries, appointed under section 16 of the act of May 29, 1930, for the retirement of employees in the classified civil service of the United States, has the honor to submit herewith its tenth annual report on the civil service retirement and disability fund.

The report contains a discussion of the provisions of the fund as provided under the act as recently amended. It also reports upon the progress which is being made in the detailed valuation required by law to be prepared as of June 30, 1930. Certain tables are submitted which have been recommended by the Board of Actuaries for use in connection with the operation of the fund.

The Board of Actuaries wishes to take this opportunity to record the substantial loss which it has suffered in the death of Joseph S. McCoy, Government actuary. As ex-officio member of the board from the establishment of the fund in 1920, he never failed in his consistent efforts to do everything within his power to improve the fund, and to recommend changes in the law and in the administration thereof when

in his judgment as a technical adviser, changes were desirable. He never hesitated to stand squarely in back of sound technical recommendations even though in many cases they brought him in disfavor with his fellow officers or employees. Surely his memory will be held in the highest esteem by those who have had the opportunity to be associated with him on the Board of Actuaries, and by those who have and will benefit by his sound judgment in matters relating to the civil service retirement and disability fund.

Respectfully submitted,

GEORGE B. BUCK,
HERBERT D. BROWN,
Board of Actuaries,
Civil Service Retirement and Disability Fund.

TENTH ANNUAL REPORT OF THE BOARD OF ACTUARIES OF THE CIVIL SERVICE RETIREMENT AND DISABILITY FUND

Since the publication of the last report of the Board of Actuaries, important changes have been made in the provisions of the civil service retirement and disability fund. Under date of May 29, 1930, amendments to the law were adopted which made more liberal the retirement benefits to be granted under the law and made other changes in the provisions. The new benefit and contribution provisions of the fund are summarized in this report.

The fifth year detailed actuarial valuation which under the law is to be prepared as of June 30, 1930, has been planned by the board but could not be completed because of the fact that the data were not available on which the computations could be based. A statement as to the reasons why a valuation balance sheet is not presented in this report is given below under the heading "Progress on Valuation as of June 30, 1930." Since the preparation of a valuation balance sheet showing the liabilities of the Government under the amended provisions has been held pending the collection of the data, the board is able to include in this report only certain preliminary figures showing the estimated cost of the fund to the Government. These figures may serve as a guide until the valuation now in preparation has been completed.

The amended law has required the preparation of tables by the Board of Actuaries for use in the calculation of annuities at retirement. These tables are presented in this report.

SUMMARY OF BENEFIT AND CONTRIBUTION PROVISIONS

The following summary gives the main benefit and contribution provisions of the act, as amended May 29, 1930, as interpreted by the Board of Actuaries, for use in its calculations.

BENEFITS

Superannuation benefit.—A superannuation retirement benefit shall be paid upon the attainment of the normal retirement age after completion of 15 years of service. Retirement will be compulsory four years after attainment of the normal retirement age with certain exceptions in the case of employees with special qualifications.

The normal ages of eligibility for retirement are as follows:

Railway postal clerks, mechanics, and laborers in navy yards, including leading men and quartermen but excluding master mechanics and foremen, those employees whose occupations are hazardous or require great physical effort, or exposure to extreme heat or cold, and employees with 15 or more years of service in the Tropics, age 62.

Letter carriers, post-office clerks, sea post clerks, employees of the Indian Service at large (excepting clerks), laborers and mechanics generally, age 65.

General employees, age 70.

Retirement will be optional with the employee two years prior to the attainment of the normal retirement age, after 30 years of service.

The amount of the benefit will equal \$30 multiplied by the total number of years of service not in excess of 30 (provided that this part of the allowance shall not exceed three-fourths his average annual basic salary¹), plus the annuity

¹ "Average annual basic salary" is used to denote the average annual basic salary received by the employee during any five consecutive years of allowable service at the option of the employee.

which the employee may purchase with the amount credited to his individual account. The minimum total annuity payable will be equal to one-fortieth of the average annual basic salary, not in excess of \$1,600 multiplied by the number of years of the employee's service, not in excess of 30.

Disability benefit.—A disability retirement benefit shall be paid upon the disability of an employee who has had five or more years of service.

The amount of the disability benefit will be determined by the same method as is used in determining the annuity of a superannuated employee.

Discontinued service benefit.—Should any employee 45 years of age or over after having served a total period of not less than 15 years and before becoming eligible for retirement, be involuntarily separated from the service through no fault of his own, such employee will be paid, either—

(a) The total amount of his deductions with interest; or

(b) An annuity beginning at any time after he has attained age 55, having a value equal to the present worth of the annuity which would have been allowed him on the basis of the service already rendered at the age when he would otherwise have been eligible for service retirement; or

(c) A deferred annuity figured on the basis of the service rendered to date beginning at the age when he otherwise would have been eligible for service retirement.

Return of contributions.—Return of the contributions of the employee credited to his individual account with interest accumulations at 4 per cent compounded annually, will be made to the employee on separation from the service prior to retirement.

Return of full contributions of the employee with interest at 4 per cent compounded annually will be made to the representative of an employee who dies in service prior to retirement on an annuity or who becomes involuntarily separated from service not by removal for cause.

Return upon death after retirement.—On the death of an annuitant before the total payments of the annuity provided by his own contributions amount to the contributions with interest credited to his individual account to the date of his retirement, the balance shall be paid to his estate, unless an optional benefit has been chosen.

Benefits to annuitants retired prior to July 1, 1930.—Benefits to annuitants retired prior to the passage of the amendment shall be recomputed in accordance with the amended provision but no benefit shall be reduced thereby.

Options.—At the time of retirement the employee may elect to receive an increased annuity, equivalent in value, providing for no return of unused principal at death.

CONTRIBUTIONS

By employees.—Employees contribute 3½ per cent of basic salary. An account will be opened for each employee. Contributions made prior to July 1, 1930, will be credited to this account with interest thereon. Contributions made beginning with July 1, 1930, less \$1 per month will be deposited in this account and interest credited thereon. At retirement the total amount credited to this account will be used to provide that part of his benefit based on his own contributions.

By United States Government.—The contributions required in addition to employees' contributions to support the plan are to be made by the Government through annual appropriations. Estimates of the necessary appropriations are to be submitted each year to the Bureau of the Budget.

Miscellaneous.—Gifts, donations, and bequests made for the retirement of employees are to be credited to the fund.

COMMENTS ON PROVISIONS AS AMENDED

The new plan of benefits and contributions is not one proposed by the Board of Actuaries, but it does conform more to the general recommendations of the board than did the plan existing prior to the last amendment. The new plan is a compromise plan of benefits, which is almost the same as that first introduced in 1930 in the Congress by the Hon. Frederick R. Lehlbach, the chairman of the House Committee on the Civil Service, as an alternative plan for modifying the then existing law, which plan was discussed as the second pro-

posal in the ninth annual report of the Board of Actuaries. This measure with certain amendments was later passed.

The amended law provides for the same normal retirement ages for the various groups of employees as the old law but makes it possible for an employee with 30 years of service to retire two years earlier than was previously permissible. The annuity payable at retirement has been changed in type.

The benefit provided prior to the passage of the amendment was subject to criticism because employees contributed on their full compensation but benefits were figured on a maximum salary of \$1,500. Employees in the higher salary classifications provided in certain instances contributions adequate to pay for their entire benefit. The law did not give any special recognition to the employee with service in excess of 30 years. The employee with the long term of service paid more than the employee with just 30 years of service and yet the same benefit was provided with the result that the longer the employee stayed with the Government the less benefit he received in proportion to his service and contributions.

The new benefit is much more equitable in this respect. It consists of two parts, the first being an annuity which the employee's contributions credited to his individual account will provide and the second being an annuity, provided from contributions by the Government and the \$1 monthly contribution from employees, of \$30 for each year of service not in excess of 30. The employee's contributions with a deduction of \$1 per month are credited to his account with interest. At retirement the amount that they will provide is determined and to this the annuity of \$30 per year of service (not in excess of 30) is added. No employee is to receive a benefit from this latter source in excess of 75 per cent of his average basic salary. If the employee's total benefit does not amount to one-fortieth of his average salary of the last five years of service (not in excess of \$1,600) multiplied by the number of his years of service not in excess of 30, he receives an additional benefit sufficient to bring his retirement annuity up to this minimum.

The board believes that the inequities of the existing act have been greatly lessened by the substitution of the new retirement benefit. A comparison of the benefits allowable in certain individual cases under the new plan as compared with the old plan is given in the following table by way of illustration of the difference in the benefits available.

TABLE 1.—*Illustration of benefits allowable under the present law compared with those allowable under law prior to amendment*

Years of contribution	Plan	Average salary at retirement						
		\$1,200	\$1,600	\$2,000	\$3,000	\$4,000	\$5,000	\$6,000
20	Prior to amendment.....	\$533	\$667	\$667	\$667	\$667	\$667	\$667
	Present plan.....	679	800	800	848	942	1,036	1,129
30	Prior to amendment.....	800	1,000	1,000	1,000	1,000	1,000	1,000
	Present plan.....	1,046	1,200	1,200	1,357	1,530	1,701	1,874
35	Prior to amendment.....	800	1,000	1,000	1,000	1,000	1,000	1,000
	Present plan.....	1,087	1,200	1,264	1,488	1,710	1,933	2,156
40	Prior to amendment.....	800	1,000	1,000	1,000	1,000	1,000	1,000
	Present plan.....	1,131	1,243	1,355	1,634	1,913	2,193	2,472
45	Prior to amendment.....	800	1,000	1,000	1,000	1,000	1,000	1,000
	Present plan.....	1,175	1,311	1,447	1,786	2,125	2,465	2,805

The disability benefit is payable after 5 years of service instead of 15, which will give greater protection to the young employees in the Government service. The disability benefit is figured in the same way as the service benefit. On resignation employees receive a return of their contributions with interest less \$1 per month, which is deducted from employees' contributions and is not returnable except in the case of death or involuntary separation.

At retirement the annuity payable in return for the employee's contributions is figured on the basis that if the employee dies before he has received in the payments of the annuity payable from his own contributions the amount of his contributions as they stood credited to his account at retirement, the balance of his contributions over such payments are returned to him. An option is offered if an employee should prefer to receive a larger annuity during his own lifetime without having any payment made at his death. For example, a man employee retiring at age 65 with \$1,000 to his credit in his account would ordinarily receive from these contributions an annuity of \$90.26. If he should die after five years' payments of his annuity there would be \$1,000 minus \$451.30 or \$548.70 due his estate. Under the optional provision offered the employee might take \$113.58 with the provision that no payment will be made at his death.

COST OF NEW PLAN TO GOVERNMENT

It has been the practice of the Board of Actuaries to include in each annual report a valuation balance sheet showing the liabilities of the Government under the civil service retirement and disability fund and the contributions required to meet these liabilities. Since 1925 the valuation balance sheet has been based upon the detailed valuation prepared as of June 30, 1925, with adjustments made to bring the valuation up to date on the basis of the estimated membership as of June 30th of each year. Since a detailed valuation is due of June 30, 1930, the board has not made an estimate of the liabilities of the Government as of June 30 because it planned to receive the basic data on which to prepare a detailed valuation. As described in greater detail below the work of collecting the data for the valuation is believed to be going forward but had not reached a stage where the board could proceed with its calculations. Therefore, this year the board has made an exception in its custom of including the valuation balance sheet in its report.

The new law makes no change in the method to be followed by the Government in making its contributions and it is anticipated that the plan of financing which has been followed in the past will be continued. Under this plan of financing the Government makes an appropriation each year to cover the normal cost of the fund or the cost for the service rendered during the year and in addition it makes an accrued liability contribution which will gradually liquidate the liability on account of benefits based on service rendered in the past. The annual valuation balance sheet gives a basis for estimating the appropriations due under this plan of financing and indicates the progress the Government is making in liquidating the accrued liability. It is anticipated that hereafter the valuation balance sheet will be prepared in the usual form.

Pending the valuation as of June 30, 1930, the board submits below the estimate of the appropriations required under the amended law as prepared prior to its passage and on the basis of the 1929 pay roll. The statement should not be taken as final inasmuch as changes may be necessary when the data are collected as of June 30, 1930, and the calculations are made in detail. Both the change in the pay roll and the check on the actual experience of the fund in respect to the mortality, withdrawal, disability, retirement and salary experience of employees may change the amounts of the appropriations and the percentage contributions indicated to be needed to cover the liabilities of the fund. In the meantime, however, the figures on the old basis, may serve as an indication of the increased cost of the new plan to the Government.

TABLE 2.—*Preliminary estimate of annual cost of civil service retirement and disability fund on basis of June 30, 1929, using new benefit provisions*

Item	Percent- age of pay roll	Annual amount as of June 30, 1929
	<i>Per cent</i>	
Normal contribution by Government.....	1.62	\$13,632,944
Deficiency contribution by Government.....	2.85	23,983,883
Total contributions required of Government.....	4.47	37,616,827

PROGRESS ON VALUATION AS OF JUNE 30, 1930

In the ninth annual report of the Board of Actuaries attention was called to the fact that although a record system of the active members of the fund is essential to the proper administration of the law, no record has been established to cover this need. Hon. Earl D. Church, the Commissioner of Pensions, being experienced in insurance affairs, was cognizant of the advantage to the fund of a proper system of records and volunteered to personally press for the establishment of a proper record system. At the time the ninth annual report was written the Board of Actuaries considered the prospect of obtaining promptly the data for the 1930 valuation very hopeful.

The passage of the new act as of May 29, 1930, has complicated somewhat the situation inasmuch as the plans of the Civil Service Commission to collect the data were undoubtedly delayed. Section 15 of the retirement act provides that the Civil Service Commission shall keep the necessary records required and the Board of Actuaries believes that efforts are now being made by the commission to establish the desired records. The Board of Actuaries is somewhat discouraged with the results thus far obtained in getting the records for the 1930 valuation but it trusts that the work of collecting the data will not be delayed and that the valuation work may be begun in the early part of this year. None of the work incident to the tabulations of data, the checking of the experience or the actual valuation, which is so much more difficult and laborious than the work incident to the collection of the necessary data can be undertaken by the Board of Actuaries until the preliminary work by the Civil Service Commission in regard to the 1930 valuation is completed.

ADOPTION OF ANNUITY TABLES

The new retirement act became a law May 29, 1930, with a provision that the retirement annuities should be determined partly on the basis of the employees' contributions. As the new benefits became effective July 1, 1930, it was necessary for the Commissioner of Pensions to have tables of annuity values adopted by the Board of Actuaries and available on or before that date in order to begin the immediate determination of annuities under the new law.

Under date of June 4, 1930, the Hon. E. W. Morgan, Acting Commissioner of Pensions, requested a meeting of the Board of Actuaries to discuss the needed tables and on June 12, 1930, the Board of Actuaries met for an all day session in Washington, and with the assistance of two other actuaries, who were familiar with the affairs of the board and who were invited to the discussion, decision was finally reached as to the mortality tables to be used as a basis for the annuity values.

The problem of the board was not a simple one because it involved not only the purely actuarial problem of selecting a table to reflect the probable mortality of a single homogeneous group but of selecting tables to apply to several groups which would be consistent when used as required under the new law, and which would carry out the evident intent of the law.

The experience of annuitants under the act had been compiled by the board and certain mortality tables developed from it which would have been appropriate for valuing the Government annuities for service annuitants for the groups previously used, but these tables did not appear to be appropriate under the new law. The difficulty of classifying employees into groups who are members of a system with a membership of over 400,000 for which no active service records were available had to be taken into account. No tables could be adopted which did not permit of quick and ready application by any employee concerned in the administration of the system.

After a check of the experience of the fund for service annuitants it was the unanimous decision of the board that the annuity tables for service annuitants should be limited to one table for men and one for women. The experience for men indicated that the use of McClintock's annuitants' table for men would give mortality rates for men which would average between the rates developed from the experience of the fund for the various groups of men. No tables had been prepared for women so that the adoption of McClintock's annuitants' table for women for women service annuitants seemed reasonable. The experience of other retirement funds indicated that the use of these tables would be in line with the general price at which annuities are offered in return for members' contributions. The board was fortified in its decisions by the fact that the annuity value to be based on the tables is not a straight life annuity but an annuity with an insured principal, that is to say, that if the annuitant dies before the payments of his annuity have amounted in total to the amount of his savings at the time of his retirement, the balance is paid to his beneficiary.

This particular point precipitated some discussion of the propriety of using the tables above mentioned also for those who retire on

account of disability. The adoption of the tables for disability would have produced a smooth junction of the disability allowance with the service allowance at the retirement age. On the other hand, if a table showing a higher mortality for disability annuitants were used, an employee retiring on disability at age 59, might receive more annuity by claiming disability than he could receive at age 60 on service retirement, with the result that there would be a strong incentive for employees contemplating retirement at the minimum retirement age to effect their retirement on the ground of disability just a few months before and thus receive a larger benefit.

The argument in favor of the single table being used for both service and disability was therefore strengthened by the need for a smooth junction at the service retirement age between the annuity values and the fact that the type of annuity normally payable under the law tends to offset the effect of differences in mortality. The majority of the board, however, believed that while the use of the tables would be acceptable near the retirement age the use of the tables at the earlier ages did not give proper consideration to the fact that disability in early life is likely to be serious. The board, therefore, unanimously decided to prepare rates of mortality for ages below the service retirement ages which would tend to reflect the general experience of the disability annuitants available in the fund and to construct a table which would run into the experience of the service annuitants at about the service retirement age.

The disability tables had to be prepared to fulfill the conditions set by the board. The mortality rates were graduated graphically and finally the tables were graduated according to Makeham's law, by use of supplementary series. The tables are as follows:

TABLE 3.—*Mortality table for disability annuitants*

Age	Men		Women	
	Living	Dying	Living	Dying
20.....	17,716,178	2,332,351	13,458,647	1,718,710
21.....	15,383,827	2,023,674	11,739,937	1,493,561
22.....	13,360,153	1,755,122	10,246,376	1,297,330
23.....	11,605,031	1,521,515	8,949,046	1,126,331
24.....	10,083,516	1,318,329	7,822,715	977,341
25.....	8,765,187	1,141,640	6,845,374	847,542
26.....	7,623,547	988,014	5,997,832	734,489
27.....	6,635,533	854,473	5,263,343	636,042
28.....	5,781,060	738,414	4,627,301	550,334
29.....	5,042,646	637,585	4,076,967	475,738
30.....	4,405,061	550,007	3,601,229	410,835
31.....	3,855,054	473,974	3,190,394	354,389
32.....	3,381,080	407,993	2,836,005	305,321
33.....	2,973,087	350,763	2,530,684	262,688
34.....	2,622,324	301,159	2,267,996	225,676
35.....	2,321,165	258,193	2,042,320	193,566
36.....	2,062,972	221,015	1,848,754	165,738
37.....	1,841,957	188,879	1,683,016	141,652
38.....	1,653,078	161,139	1,541,364	120,831
39.....	1,491,939	137,233	1,420,533	102,869
40.....	1,354,706	116,672	1,317,664	87,403
41.....	1,238,034	99,030	1,230,261	74,126
42.....	1,139,004	83,938	1,156,135	62,763
43.....	1,055,066	71,070	1,093,372	53,078
44.....	983,996	60,151	1,040,294	44,863
45.....	923,845	50,930	995,431	37,938
46.....	872,915	43,196	957,493	32,143
47.....	829,719	36,759	925,350	27,341
48.....	792,960	31,452	898,009	23,404
49.....	761,508	27,132	874,605	20,227

TABLE 3.—Mortality table for disability annuitants—Continued

Age	Men		Women	
	Living	Dying	Living	Dying
50.....	734, 376	23, 665	854, 378	17, 713
51.....	710, 711	20, 941	836, 665	15, 773
52.....	689, 770	18, 848	820, 892	14, 330
53.....	670, 922	17, 303	806, 562	13, 173
54.....	653, 619	16, 217	793, 245	12, 668
55.....	637, 402	15, 516	780, 577	12, 330
56.....	621, 886	15, 138	768, 247	12, 252
57.....	606, 728	15, 020	755, 995	12, 392
58.....	591, 728	15, 112	743, 603	12, 708
59.....	576, 616	15, 373	730, 895	13, 713
60.....	561, 243	15, 758	717, 722	13, 757
61.....	545, 485	16, 243	703, 965	14, 436
62.....	529, 242	16, 796	689, 529	15, 196
63.....	512, 446	17, 397	674, 333	16, 015
64.....	495, 049	18, 027	658, 318	16, 977
65.....	477, 022	18, 669	641, 431	17, 710
66.....	458, 353	19, 312	623, 631	18, 742
67.....	439, 041	19, 939	604, 889	19, 706
68.....	419, 102	20, 538	585, 183	20, 681
69.....	398, 564	21, 096	564, 502	21, 655
70.....	377, 468	21, 597	542, 847	22, 618
71.....	355, 871	22, 026	520, 229	23, 552
72.....	333, 845	22, 365	496, 677	24, 444
73.....	311, 480	22, 600	472, 233	25, 272
74.....	288, 880	22, 710	446, 961	26, 019
75.....	266, 170	22, 682	420, 942	26, 660
76.....	243, 488	22, 498	394, 282	27, 173
77.....	220, 990	22, 145	367, 109	27, 534
78.....	198, 845	21, 613	339, 575	27, 719
79.....	177, 232	20, 898	311, 856	27, 705
80.....	156, 534	19, 995	284, 151	27, 471
81.....	136, 539	18, 914	256, 680	27, 003
82.....	117, 425	17, 666	229, 677	26, 286
83.....	99, 759	16, 271	203, 391	25, 318
84.....	83, 488	14, 759	178, 073	24, 102
85.....	68, 729	13, 162	153, 971	22, 651
86.....	55, 567	11, 523	131, 320	20, 989
87.....	44, 044	9, 882	110, 331	19, 148
88.....	34, 162	8, 289	91, 183	17, 173
89.....	25, 873	6, 782	74, 010	15, 117
90.....	19, 091	5, 402	58, 893	13, 035
91.....	13, 689	4, 177	45, 858	10, 990
92.....	9, 512	3, 125	34, 868	9, 039
93.....	6, 387	2, 258	25, 829	7, 236
94.....	4, 129	1, 568	18, 593	5, 622
95.....	2, 561	1, 043	12, 971	4, 228
96.....	1, 518	661	8, 743	3, 068
97.....	857	400	5, 675	2, 141
98.....	457	227	3, 534	1, 431
99.....	230	122	2, 103	912
100.....	108	60	1, 191	552
101.....	48	29	639	316
102.....	19	12	323	170
103.....	7	5	153	86
104.....	2	1	67	40
105.....	1	1	27	17
106.....			10	7
107.....			3	2
108.....			1	1

TABLE 4.—Mortality table for service annuitants

Age	Men		Women	
	Living	Dying	Living	Dying
60.....	500,461	15,415	717,174	13,512
61.....	545,046	16,040	703,662	14,294
62.....	528,006	16,681	689,368	15,116
63.....	512,325	17,335	674,252	15,973
64.....	494,990	17,995	658,279	16,866
65.....	476,995	18,654	641,413	17,790
66.....	458,341	19,305	623,623	18,737
67.....	439,036	19,936	604,836	19,704
68.....	419,100	20,537	585,182	20,680
69.....	398,563	21,095	564,502	21,655
70.....	377,468	21,597	542,847	22,618
71.....	355,871	22,026	520,229	23,552
72.....	333,845	22,365	496,677	24,444
73.....	311,480	22,600	472,233	25,272
74.....	288,880	22,710	446,961	26,019
75.....	266,170	22,682	420,942	26,660
76.....	243,488	22,498	394,282	27,173
77.....	220,990	22,145	367,109	27,534
78.....	198,845	21,613	339,575	27,719
79.....	177,232	20,898	311,856	27,705
80.....	156,334	19,995	284,151	27,471
81.....	136,339	18,914	256,680	27,003
82.....	117,425	17,666	229,677	26,286
83.....	99,759	16,271	203,391	25,318
84.....	83,488	14,759	178,073	24,102
85.....	68,729	13,162	153,971	22,651
86.....	55,567	11,523	131,320	20,989
87.....	44,044	9,882	110,331	19,148
88.....	34,162	8,289	91,183	17,173
89.....	25,873	6,782	74,010	15,117
90.....	19,091	5,402	58,893	13,035
91.....	13,689	4,177	45,858	10,990
92.....	9,512	3,125	34,868	9,039
93.....	6,387	2,258	25,829	7,236
94.....	4,129	1,568	18,593	5,622
95.....	2,561	1,043	12,971	4,228
96.....	1,518	661	8,743	3,068
97.....	857	400	5,675	2,141
98.....	457	227	3,534	1,431
99.....	230	122	2,103	912
100.....	108	60	1,191	552
101.....	48	29	639	316
102.....	19	12	323	170
103.....	7	5	153	86
104.....	2	1	67	40
105.....	1	1	27	17
106.....			10	7
107.....			3	2
108.....			1	1

The annuity values, on a 4 per cent basis as required under the law are given in the following tables:

TABLE 5.—Annuity values for disability annuitants

Age	Life annuity with return of the unexpended principal		Life annuity with no return of unexpended principal	
	Men	Women	Men	Women
(a)	(b)	(c)	(d)	(e)
20.....	10.074	10.906	5.849	6.260
21.....	10.215	11.148	5.906	6.368
22.....	10.377	11.416	5.974	6.492
23.....	10.565	11.722	6.054	6.635
24.....	10.786	12.060	6.147	6.799
25.....	11.031	12.422	6.257	6.987
26.....	11.302	12.818	6.383	7.200
27.....	11.603	13.235	6.530	7.440
28.....	11.936	13.667	6.698	7.709
29.....	12.289	14.109	6.890	8.010
30.....	12.661	14.546	7.107	8.342

TABLE 5.—*Annuity values for disability annuitants—Continued*

Age	Life annuity with return of the unexpended principal		Life annuity with no return of unexpended principal	
	Men	Women	Men	Women
(a)	(b)	(c)	(d)	(e)
31	13.049	14.976	7.352	8.706
32	13.436	15.381	7.625	9.101
33	13.822	15.758	7.927	9.524
34	14.190	16.098	8.257	9.972
35	14.533	16.393	8.614	10.439
36	14.846	16.643	8.994	10.919
37	15.118	16.844	9.394	11.403
38	15.345	16.997	9.807	11.881
39	15.526	17.102	10.224	12.343
40	15.661	17.161	10.638	12.778
41	15.749	17.178	11.037	13.177
42	15.792	17.157	11.411	13.529
43	15.792	17.100	11.750	13.828
44	15.754	17.011	12.045	14.063
45	15.681	16.895	12.289	14.247
46	15.576	16.754	12.476	14.363
47	15.444	16.591	12.603	14.419
48	15.289	16.411	12.671	14.416
49	15.114	16.216	12.681	14.360
50	14.920	16.007	12.636	14.256
51	14.711	15.785	12.542	14.109
52	14.488	15.553	12.403	13.925
53	14.259	15.315	12.227	13.710
54	14.020	15.069	12.019	13.469
55	13.772	14.817	11.785	13.207
56	13.516	14.557	11.529	12.927
57	13.259	14.296	11.256	12.634
58	12.997	14.031	10.971	12.330
59	12.729	13.760	10.675	12.017
60	12.457	13.484	10.372	11.697
61	12.187	13.211	10.063	11.373
62	11.913	12.933	9.751	11.044
63	11.634	12.650	9.436	10.713
64	11.350	12.367	9.120	10.380
65	11.079	12.082	8.804	10.046
66	10.797	11.798	8.488	9.711
67	10.510	11.506	8.173	9.376
68	10.234	11.222	7.859	9.042
69	9.954	10.934	7.548	8.709
70	9.663	10.642	7.239	8.378

TABLE 6.—*Annuity values for service annuitants*

Age	Life annuity with return of the unexpended principal		Life annuity with no return of unexpended principal	
	Men	Women	Men	Women
(a)	(b)	(c)	(d)	(e)
60	12.458	13.488	10.384	11.705
61	12.188	13.215	10.070	11.377
62	11.914	12.938	9.754	11.046
63	11.634	12.655	9.438	10.714
64	11.356	12.367	9.121	10.381
65	11.079	12.084	8.804	10.046
66	10.797	11.798	8.488	9.711
67	10.510	11.506	8.173	9.376
68	10.234	11.222	7.859	9.042
69	9.954	10.934	7.548	8.709
70	9.668	10.642	7.239	8.378
71	9.385	10.352	6.934	8.050
72	9.110	10.067	6.633	7.724
73	8.830	9.776	6.336	7.402
74	8.543	9.482	6.045	7.084
75	8.273	9.202	5.759	6.770
76	8.003	8.917	5.478	6.462
77	7.727	8.628	5.205	6.159
78	7.443	8.347	4.938	5.863
79	7.193	8.073	4.678	5.573
80	6.932	7.793	4.426	5.290